



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,598	09/29/2000	Howard L. Operowsky	[BOC9-2000-0005US1]	2104
40987	7590	12/27/2005	EXAMINER	
AKERMAN SENTERFITT P. O. BOX 3188 WEST PALM BEACH, FL 33402-3188			TWEEL JR, JOHN ALEXANDER	
			ART UNIT	PAPER NUMBER
			2636	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/676,598	Applicant(s) OPEROWSKY ET AL. a a	
	Examiner John A. Tweel, Jr.	Art Unit 2636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) 1-10,25,37-44 and 49 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-24,26-36 and 45-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

- Claims 1-10, 25, 37-44, and 49 drawn to display of destination categories.
- Claims 11-24, 26-36, and 45-48 drawn to display of moving landmarks.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Art Unit: 2636

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Richard Hinson on 12/20/05 a provisional election was made with traverse to prosecute the invention of landmark display, claims 11-24, 26-36, and 45-48. Applicant in replying to this Office action must make affirmation of this election. Claims 1-10, 25, 37-44, and 49 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

4. Claims 11-15, 19-24, 26-36, 45, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** (supplied with previous action) in view of

Art Unit: 2636

Knoll et al (supplied with previous action) and **Ong** [U.S. 6,285,317] (supplied with previous action).

For claim 11, the method of providing driving instructions taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed sensing the position of the vehicle is achieved using the current position detector (No. 12), 2) the claimed comparing the position of the vehicle with a desired location is achieved using the arithmetic control (No. 20) with route computer (No. 22), 3) the claimed generating a signal is achieved using the display unit (No. 28) and speakers (No. 34) that indicates that a driver should turn if the vehicle is at a predetermined distance with respect to an upcoming turn. However, although there is a display unit (No. 28) associated with the system, it is not a display on a windshield.

The en route vehicle guidance system with heads up display taught by **Knoll** includes similar subject matter as the primary invention, most notably a positioning and navigation system with simple route entry methods. As seen in Figures 1-7, simple turning directions are presented to the driver as well as vehicle speed and engine rpm. As stated in the specification (Col. 7, Lns. 26-31), the purpose of the heads up display is to enable the driver to recognize indicators, such as speed and traffic information even if his attention is directed to the traffic situation and without having to remove his eyes from the road. The need for adjustment of the eyes of the driver is eliminated to a large extent.

The reference taught by Yokoyama presents an ideal platform onto which a heads up display may be applied. The information needed to enable a display is

Art Unit: 2636

already present to drive the display (No. 28) already present. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a heads-up display similar to Knoll into the primary reference for the purpose of enabling the driver to recognize simple driving directions without having to remove his eyes from the road. Another feature not found in either reference is a virtual image of an area around the desired location including at least one landmark, wherein at least one attribute of the landmark changes as the vehicle moves in relation to the landmark.

Displaying an immediate area or desired location with landmarks is not new in the prior art. The navigation system with three-dimensional display taught by **Ong** includes similar subject matter as the two primary references; that is, a vehicle position data generator generates signals indicating the location of the vehicle as well as pictures to be displayed to the operator of the vehicle with driving directions superimposed thereon. As seen in Figures 4 and 8, one of the systems used to provide a virtual image to the operator in addition to 3D graphic renderers is a video camera (No. 38) mounted to the vehicle itself. The picture is received by an image capture device (No. 44) onto which a driving direction is added. Heretofore, navigation systems have used local storage devices such as CD-ROM and up-to-the-minute information has not been readily available. The obvious advantage of this system is a realistic view of the territory ahead and the direction being clearly shown on said view.

The primary references, particularly **Yokoyama**, present an ideal platform onto which a camera such as Ong's may be applied. The map information storage may not have the latest information and changes over time may certainly occur with construction

Art Unit: 2636

or changes in traffic flow. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a camera such as that of Ong into the combination above to provide realistic, current information to the driver that can be easily understood and read.

For claim 12, all three references provide audible signals indicating the driver should turn at an upcoming location.

For claim 13, the system of **Knoll** presents the information on a windshield.

For claim 14, the system of **Yokoyama** includes several speakers (No. 34) to broadcast message thereon.

For claim 15, Figure 3 of **Yokoyama** displays a distance to the next crossing.

For claim 19, the predetermined relationship of **Yokoyama** is distance to the upcoming turn.

For claim 20, the program stored on a storage medium for generating a displayed message to a driver taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed program element for determining a message for display is contained within the route guiding unit (No 26) that determines what direction should be given at the next upcoming turn, 2) the claimed program element for determining an appropriate time is contained within the route computer and arithmetic control (No. 20) that determines when the instruction should be given, and 3) the claimed program element coupled to a projector is contained within the hardware of the display unit (No. 28) that displays messages at the appropriate time. However, this message is not displayed on the windshield of the car at the appropriate time.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 11 above. Also, there is no mention of providing a virtual image including at least one landmark, wherein at least one attribute of the at least one landmark changes as the vehicle moves.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 11 above.

For claim 21, the system of **Yokoyama** determines the message to display based on the upcoming turn and the direction to take thereby. Also, the system determines based on distance prior to the location of the turn for the driving instruction to be both displayed and announced on the audible system.

For claim 22, one determining system to locate the car in the system of **Yokoyama** is a GPS receiver (No. 14).

For claim 23, the GPS system of **Yokoyama** receives its instructions from a remote source.

For claim 24, the system of **Yokoyama** includes a route-guiding unit (No. 26) located in the arithmetic control (No. 20) that provides the navigation to the system.

For claim 26, the system for displaying information to a driver in a vehicle taught by **Yokoyama** includes the following claimed subject matter, as noted, 1) the claimed location system is met by the GPS receiver (No. 14) and direction sensor (No. 16) which determines the location of the vehicle, 2) the claimed storage device is met by the map information storage (No. 10) which provides pictures of the roadway near the location of the vehicle in response to the location of the vehicle, and 3) the claimed device which

Art Unit: 2636

generates a display is met by the display unit (No. 28) which displays the picture of the roadway. However, the picture is not on the windshield of the vehicle allowing the driver to see the display without removing his eyes from the roadway.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 11 above. Also, there is no mention of an image of a landmark, wherein at least one attribute of the image of the landmark changes as the vehicle moves.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 11 above.

For claim 27, the pictures displayed in **Ong** result from live pictures.

For claim 28, the live picture of **Ong** is from a camera mounted over the roadway.

For claim 29, the pictures seen in Figures 2 and 3 of **Yokoyama** include driving directions.

For claim 30, the driving instructions in **Yokoyama** are in the form of a turn indicated on the picture of the roadway.

For claim 31, the pictures shown in **Yokoyama** have been taken and stored in memory (No. 10).

For claim 32, the method for displaying information to a vehicle driver taught by **Yokoyama** includes the following claimed steps, as noted, 1) the claimed determining the position of the vehicle is achieved using the GPS receiver (No. 14) and direction sensor (No. 16) which determines the location of the vehicle, 2) the claimed finding a

Art Unit: 2636

picture of an intersection is achieved using the map information storage (No. 10) which provides pictures of the roadway near the location of the vehicle in response to the location of the vehicle, and 3) the claimed displaying the picture of the intersection is achieved using the display unit (No. 28) which displays the picture of the roadway. However, the picture is not on the windshield of the vehicle allowing the driver to see the picture while looking out the windshield.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 11 above. Also, there is no mention of the picture of the intersection including a landmark, at least one attribute of the image of the landmark changing as the vehicle moves.

The claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 11 above.

For claim 33, the method taught by **Yokoyama** retrieves stored pictures of the intersections from memory (No. 10).

For claim 34, the pictures received by **Ong** are live pictures.

For claim 35, the live picture of **Ong** is from a camera mounted above the intersection.

For claim 36, Figures 2 and 3 of **Yokoyama** add driving instructions to the display.

For claim 45, as the vehicle of **Ong** moves closer to a landmark or intersection, the size of the landmark increases.

For claim 46, as the vehicle of **Ong** moves closer to a landmark, the landmark becomes more prominent in the screen and therefore brighter.

5. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** in view of **Knoll et al** and **Ong** as applied to claim 11 above, and further in view of **Trovato et al**.

For claim 16, the method taught by the combination of references above includes the claimed subject matter as discussed in the rejection of claim 11 above. However, the method does not provide an indication of a desired action a predetermined time period in advance of the desired action.

The portable system for providing voice-driving directions taught by **Trovato** determines a range based on both distance and time from the current position to a position at which the instructions should be spoken. The time period accounts for the amount of time required speaking the instructions, for the reaction time of the driver at the speed that the system is moving in the vehicle and for an error in position associated with GPS systems. The obvious advantage of this system is to provide real time instructions that are given to a driver well in advance of the upcoming turn thereby reducing driver error.

All three references pertain to similar subject matter; that is, vehicle navigation systems. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide information of a desired action a predetermined time period in advance of the turn for the purpose of reducing driver error.

For claim 18, the predetermined relationship of **Trovato** is estimated time to a desired location.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** in view of **Knoll et al** and **Ong** as applied to claim 11 above, and further in view of **Davis et al**.

For claim 17, the combination of references includes the claimed subject matter as discussed in the rejection of claim 11 above. However, neither reference includes an indication that the driver did not make a turn, whereby the driver may take action more quickly to recover from the missing desired location.

The automobile navigation system using real time spoken driving instructions taught by **Davis** provides spoken instructions to the driver of an automobile to guide the driver along a route. This invention, called the "Back Seat Driver", contains a map database and route finding algorithm. A position sensor tracks the location of the automobile. Spoken instructions are then given well in advance of an upcoming turn to guide the driver to their destination. An important aspect of the system is to notify the driver that a mistake has been made (Col. 2, Lns. 50-53) and then finds a new route from the current location. The obvious advantage of this property is to prevent the driver from getting lost in an unfamiliar area.

All references pertain to similar subject matter; that is, the navigation of vehicles using graphic and speech synthesis. The Yokoyama reference in particular stops its speech production when the driver has deviated from the set course. This system

Art Unit: 2636

would greatly benefit from the self-correcting system of Davis. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a notification that a turn has been missed in the combination of reference above for the purpose of preventing the driver from getting lost in unfamiliar territory.

7. Claims 47 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yokoyama et al** in view of **Knoll et al** and **Ong** as applied to claims 26 and 32 above, and further in view of **Ellenby et al** [U.S. 6,414,696].

For claims 47 and 48, the combination of references above includes the claimed subject matter as discussed in the rejection of claims 26 and 32 above. However, there is no mention of superimposing text corresponding to the landmark on the picture.

To superimpose text on an image of a landmark is not new, as seen in the graphical user interface for computer vision systems taught by **Ellenby**. As seen in the reference, the image taken from a digital camera is “augmented” with text describing the history or other information of a viewed landmark. Even translated foreign text may appear depending on where the camera is facing. The position and attitude of the superimposed text is also updated using a position sensor and attitude sensor linked to the computer vision system. The obvious advantage of this system is to facilitate operation, enhance functionality, improve interpretation of images, and increase understanding of scenes. Prior art vision systems could not do that.

The Ellenby reference is designed to be used with a camera. A camera is found in the Ong reference when formulating the image presented to the driver. It would have

Art Unit: 2636

been obvious to one of ordinary skill in the art at the time the invention was made to include a vision system similar to Ellenby with the camera of Ong for the purpose of increasing understanding of scenes and improving interpretation of images. This is an obvious advantage in a navigation system.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morimoto et al [U.S. 5,739,773] displays traffic information in different or brighter colors.

Schmidt et al [U.S. 6,885,939] calculates an instantaneous position for a 3D visualization.

Yokokohji et al [U.S. 6,956,503] receives an image sensed by a camera and detects an external index.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Tweel, Jr. whose telephone number is 571 272 2969. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 571 272 2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2636

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAT
12/23/05

A handwritten signature in black ink, appearing to read 'John Tweel', with a stylized, sweeping flourish extending from the end.

JOHN TWEEL
PRIMARY EXAMINER